

*CSM George DeSario Jr.  
Command Sergeant Major  
U.S. Army Armor Center*



## Transparent Armor Gun Shield: A Possible Solution to Enhance Soldier Protection

Roughly one year ago, U.S. troops invaded Iraq. Today, armor and cavalry soldiers remain on patrol throughout city streets with what some may argue is inadequate armor protection for their high mobility, multipurpose wheeled vehicles (HMMWVs). Troops in Iraq and Afghanistan are equipped with roughly 2,300 armored HMMWVs — only about half as many as commanders agree are needed to guard against roadside bombs that have become the insurgent's deadly weapon of choice. Soldiers have been using sandbags and Kevlar blankets on the floors of their unprotected HMMWVs to help improve levels of protection.

Production of armored HMMWVs has been increased and Army officials believe that by midsummer, a combination of newly manufactured HMMWVs, along with others from bases around the world, will arrive in Iraq and Afghanistan, which will bring the total number of armored HMMWVs to the needed 4,400. In the interim, General Peter J. Schoomaker, the Army's Chief of Staff, said the Army has been sending thousands of add-on armor plating kits to shield unprotected HMMWVs. Around 1,500 of the kits have been applied to Army vehicles and 6,900 more kits are expected to arrive between May and midsummer this year. Officials believe these add-on armor kits are an improvement; however, they have gaps and lack the full protection of the armored HMMWV.

Besides increasing the survivability of the vehicle, it is necessary to consider creating more protection for the HMMWV gunner while he is firing his MK19 automatic grenade launcher; M2, .50-caliber machine gun; or M240, 7.62mm machine

gun. Commanders are always looking for innovative force protection techniques to increase levels of soldier protection and equipment survivability. A Department of Defense contractor has taken on this challenge and created a transparent armor gun shield (TAGS). This shield can be mounted on the M1025, M1026, M1043, or M1044 armament carrier configurations of the HMMWV family to protect the gunner from small-arms fire. The TAGS can also be mounted on other platforms, such as tactical vehicles, that support the universal gun mount.

The U.S. Army Training and Doctrine Command (TRADOC) System Manager for Abrams (TSM Abrams) has been working with the Fort Knox Master Gunner Branch by providing user feedback on a prototype TAGS design. The contractor has incorporated user recommendations following a demonstration and has made significant improvements to the product, which has the potential to add increased survivability for the HMMWV gunner. This protective measure offers ballistic protection that could possibly prevent injuries from small-arms fire to the HMMWV gunner's head, shoulders, and chest.

Currently, the HMMWV TAGS is undergoing Army testing at Aberdeen Proving Grounds, Maryland. Tests will be completed within the next few weeks. Commanders, who believe in the potential of this product, are field testing the initial prototype design in the Middle East.

Similar to the HMMWV TAGS, the contractor has also developed a prototype TAGS for the loader's weapon station for the M1A1 Abrams. TSM Abrams and Fort Knox Master Gunner Branch have pro-

vided user recommendations following two demonstrations to allow engineers to make significant improvements to the product, which has the potential to add increased survivability for the tank loader. User juries measured the serviceability of the product and determined if it interfered with any of the tank crew duties and field of view. Safety items were also evaluated to ensure the M240 machine gun could be stowed in the proper position, allowing the loader hatch to open and close without any interference. From a safety perspective, it is essential the tank loader hatch can be opened fairly quickly to evacuate the tank crew in an emergency.

Both of these products will be on display during the 2004 Armor Conference in May at Fort Knox, Kentucky. Senior leaders will have the opportunity to view these products and form their own opinions.

We, as leaders, owe our troops the best level of soldier protection while they execute their missions and fight the Global War On Terrorism. Units deploying to United States Central Command (CENTCOM) that believe these products can meet their requirements are encouraged to prepare and forward an operational needs statement through their chain of command to the Coalition Forces Land Component Command (CFLCC) for approval consideration.

A special thanks to Major Patrick M. Tiemann of TSM Abrams and Mr. Jake Fryer of United Defense, L.P., for their commitment to enhancing soldier protection for our armor force.

**Iron Discipline and Standards!**